

Culvert Size Chart

Recommended Flow Areas for Selected Frequencies (assumes an average velocity 3.5 feet per second)									
	12A ^{5/6}	(Ft ³ /sec)/3.5		23A ^{5/6}	(Ft ³ /sec)/3.5		32A ^{5/6}	(Ft ³ /sec)/3.5	
DA (sq mi)	2 Yr	Rec. Area (sq ft)	Culvert Diameter (inches)	5 Yr	Rec. Area (sq ft)	Culvert Diameter (inches)	10 Yr	Rec. Area (sq ft)	Culvert Diameter (inches)
0.10	1.8	0.5	18	3.4	1.0	18	4.7	1.3	18
0.20	3.1	0.9	18	6.0	1.7	18	8.4	2.4	24
0.30	4.4	1.3	18	8.4	2.4	24	11.7	3.4	24
0.40	5.6	1.6	18	10.7	3.1	24	14.9	4.3	30
0.50	6.7	1.9	24	12.9	3.7	24	18.0	5.1	30
0.60	7.8	2.2	24	15.0	4.3	30	20.9	6.0	36
0.70	8.9	2.5	24	17.1	4.9	30	23.8	6.8	36
0.80	10.0	2.8	24	19.1	5.5	30	26.6	7.6	42
0.90	11.0	3.1	24	21.1	6.0	36	29.3	8.4	42
1.00	12.0	3.4	30	23.0	6.6	36	32.0	9.1	42
1.10	13.0	3.7	30	24.9	7.1	36	34.6	9.9	42
1.20	14.0	4.0	30	26.8	7.6	42	37.3	10.6	48
1.30	14.9	4.3	30	28.6	8.2	42	39.8	11.4	48
1.40	15.9	4.5	30	30.4	8.7	42	42.4	12.1	48
1.50	16.8	4.8	30	32.2	9.2	42	44.9	12.8	48
1.60	17.8	5.1	30	34.0	9.7	42	47.3	13.5	54
1.70	18.7	5.3	36	35.8	10.2	48	49.8	14.2	54
1.80	19.6	5.6	36	37.5	10.7	48	52.2	14.9	54
1.90	20.5	5.9	36	39.3	11.2	48	54.6	15.6	54
2.00	21.4	6.1	36	41.0	11.7	48	57.0	16.3	54
2.10	22.3	6.4	36	42.7	12.2	48	59.4	17.0	60
2.20	23.1	6.6	36	44.4	12.7	48	61.7	17.6	60
2.30	24.0	6.9	36	46.0	13.2	48	64.1	18.3	60
2.40	24.9	7.1	36	47.7	13.6	54	66.4	19.0	60
2.50	25.8	7.4	42	49.4	14.1	54	68.7	19.6	60
2.60	26.6	7.6	42	51.0	14.6	54	71.0	20.3	60
2.70	27.5	7.8	42	52.6	15.0	54	73.2	20.9	66
2.80	28.3	8.1	42	54.2	15.5	54	75.5	21.6	66
2.90	2.90	8.3	42	55.9	16.0	54	77.7	22.2	66
3.00	30.0	8.6	42	57.5	16.4	60	79.9	22.8	66
3.10	30.8	8.8	42	59.0	16.9	60	82.2	23.5	66
3.20	31.6	9.0	42	60.6	17.3	60	84.4	24.1	66
3.30	32.5	9.3	42	62.2	17.8	60	86.5	24.7	72
3.40	33.3	9.5	42	63.8	18.2	60	88.7	25.4	72
3.50	34.1	9.7	42	65.3	18.7	60	90.9	26.0	72
3.60	34.9	10.0	48	66.9	19.1	60	93.1	26.6	72
3.70	35.7	10.2	48	68.4	19.6	60	95.2	27.2	72
3.80	36.5	10.4	48	70.0	20.0	60	97.3	27.8	72
3.90	37.3	10.7	48	71.5	20.4	66	99.5	28.4	72
4.00	38.1	10.9	48	73.0	20.9	66	101.6	29.0	72
4.10	38.9	11.1	48	74.5	21.3	66	103.7	29.6	78
4.20	39.7	11.3	48	76.1	21.7	66	105.8	30.2	78
4.30	40.5	11.6	48	77.6	22.2	66	107.9	30.8	78
4.40	41.2	11.8	48	79.1	22.6	66	110.0	31.4	78
4.50	42.0	12.0	48	80.6	23.0	66	112.1	32.0	78
4.60	42.8	12.2	48	82.0	23.4	66	114.1	32.6	78
4.70	43.6	12.5	48	83.5	23.9	66	116.2	33.2	78

Recommended Flow Areas for Selected Frequencies (assumes an average velocity 3.5 feet per second)

	12A ^{5/6} (Ft ³ /sec)/3.5			23A ^{5/6} (Ft ³ /sec)/3.5			32A ^{5/6} (Ft ³ /sec)/3.5		
DA (sq mi)	2 Yr	Rec. Area (sq ft)	Culvert Diameter (inches)	5 Yr	Rec. Area (sq ft)	Culvert Diameter (inches)	10 Yr	Rec. Area (sq ft)	Culvert Diameter (inches)
4.80	44.3	12.7	48	85.0	24.3	66	118.3	33.8	78
4.90	45.1	12.9	48	86.5	24.7	72	120.3	34.4	84
5.00	45.9	13.1	48	87.9	25.1	72	122.4	35.0	84
5.20	47.4	13.5	54	90.9	26.0	72	126.4	36.1	84
5.40	48.9	14.0	54	93.8	26.8	72	130.5	37.3	84
5.60	50.4	14.4	54	96.7	27.6	72	134.5	38.4	84
5.80	51.9	14.8	54	99.5	28.4	72	138.5	39.6	84
6.00	53.4	15.3	54	102.4	29.2	72	142.4	40.7	
6.20	54.9	15.7	54	105.2	30.1	78	146.4	41.8	
6.40	56.4	16.1	54	108.0	30.9	78	150.3	42.9	
6.60	57.8	16.5	54	110.8	31.7	78	154.2	44.1	
6.80	59.3	16.9	60	113.6	32.5	78	158.1	45.2	
7.00	60.7	17.4	60	116.4	33.3	78	162.0	46.3	
7.20	62.2	17.8	60	119.2	34.0	78	165.8	47.4	
7.40	63.6	18.2	60	121.9	34.8	84	169.6	48.5	
7.60	65.0	18.6	60	124.7	35.6	84	173.4	49.6	
7.80	66.5	19.0	60	127.4	36.4	84	177.2	50.6	
8.00	67.9	19.4	60	130.1	37.2	84	181.0	51.7	
8.20	69.3	19.8	60	132.8	37.9	84	184.4	52.8	
8.40	70.7	20.2	60	135.5	38.7	84	188.5	53.9	
8.60	72.1	20.3	66	138.2	39.5	84	192.3	54.9	
8.80	73.5	21.0	66	140.9	40.2		196.0	56.0	
9.00	74.9	21.4	66	143.5	41.0		199.7	57.1	
9.20	76.3	21.8	66	146.2	41.8		203.4	58.1	
9.40	77.6	22.2	66	148.8	42.5		207.1	59.2	
9.60	79.0	22.6	66	151.5	43.3		210.7	60.2	
9.80	80.4	23.0	66	154.1	44.0		214.4	61.2	
10.00	81.8	23.4	66	156.7	44.8		218.0	62.3	
10.50	85.1	24.3	66	163.2	46.6		227.1	64.9	
11.00	8.5	25.3	72	169.7	48.5		236.0	67.4	
11.50	91.9	26.2	72	176.1	50.3		244.9	70.0	
12.00	95.2	27.2	72	182.4	52.1		253.8	72.5	
12.50	98.5	28.1	72	188.7	53.9		262.6	75.0	
13.00	101.7	29.1	72	195.0	55.7		271.3	77.5	
13.50	105.0	30.0	78	201.2	57.5		280.0	80.0	
14.00	108.2	30.9	78	207.4	59.3		288.6	82.4	
14.50	111.4	31.8	78	213.6	61.0		297.1	84.9	
15.00	114.6	32.7	78	219.7	62.8		305.7	87.3	
15.50	117.8	33.7	78	225.8	64.5		314.1	89.7	
16.00	121.0	34.6	78	231.8	66.2		322.5	92.2	
16.50	124.1	35.5	78	237.8	68.0		330.9	94.5	
17.00	127.2	36.3	78	243.8	69.7		339.3	96.9	
17.50	130.3	37.2	78	249.8	71.4		347.5	99.3	
18.00	133.4	38.1	78	255.7	73.1		355.8	101.7	
18.50	136.5	39.0	78	261.6	74.8		364.0	104.0	
19.00	139.6	39.9	78	267.5	76.4		372.2	106.3	
19.50	142.6	40.8	84	273.4	78.1		380.3	108.7	
20.00	145.7	41.6	84	279.1	79.8		388.5	111.0	

English & Estimated Metric Dimensions Selected Circular & Arch Culverts									
		Reinforced Concrete Arch					Reinforced Concrete Arch		
Circular Diameter (inches)	Area (sq-ft)	Rise (inches)	Span (inches)	Area (sq-ft)	Circular Diameter (mm)	Area (sq-m)	Rise (mm)	Span (mm)	Area (sq-m)
12	0.79				300	0.073			
15	1.23	11.00	18.00	1.10	380	0.114	280	450	0.102
18	1.77	13.50	22.00	1.65	460	0.164	340	550	0.153
21	2.40	15.50	26.00	2.20	530	0.223	390	660	0.204
24	3.14	18.00	28.50	2.80	610	0.292	460	720	0.260
30	4.91	22.50	36.25	4.40	760	0.456	570	920	0.409
36	7.07	26.38	43.75	6.40	910	0.656	670	1110	0.595
42	9.62	31.31	51.13	8.80	1070	0.893	800	1290	0.818
48	12.56	36.00	58.50	11.40	1220	1.17	910	1480	1.059
54	15.90	40.00	65.00	14.30	1370	1.48	1020	1650	1.329
60	19.63	45.00	73.00	17.70	1520	1.82	1140	1850	1.644
72	28.26	54.00	88.00	25.60	1830	2.63	1370	2230	2.378
84	38.47	62.00	102.00	34.60	2130	3.57	1570	2590	3.214
90	44.16	72.00	115.00	44.50	2290	4.10	1830	2920	4.134
96	50.24	77.25	122.00	51.70	2440	4.67	1960	3090	4.803
108	63.59	87.13	138.00	66.00	2740	5.91	2210	3500	6.132
120	78.50	97.88	154.00	81.80	3050	7.29	2490	3910	7.599
132	94.99	106.50	168.75	99.10	3350	8.82	2710	4280	9.207

		Corrugated Steel Pipe Arch					Corrugated Steel Pipe Arch		
Circular Diameter (inches)	Area (sq-ft)	Rise (inches)	Span (inches)	Area (sq-ft)	Circular Diameter (mm)	Area (sq-m)	Rise (mm)	Span (mm)	Area (sq-m)
12	0.79				300	0.07			
15	1.23	13.00	17.00	1.10	380	0.11	330	430	0.102
18	1.77	15.00	21.00	1.65	460	0.16	380	530	0.153
21	2.40	18.00	24.00	2.20	530	0.22	460	610	0.204
24	3.14	20.00	28.00	2.80	610	0.29	510	710	0.260
30	4.91	24.00	35.00	4.40	760	0.46	610	880	0.409
36	7.07	29.00	42.00	6.40	910	0.66	740	1060	0.595
42	9.62	33.00	49.00	8.80	1070	0.89	840	1240	0.818
48	12.56	38.00	57.00	11.40	1220	1.17	970	1440	1.059
54	15.90	43.00	64.00	14.30	1370	1.48	1090	1620	1.329
60	19.63	47.00	71.00	17.70	1520	1.82	1190	1800	1.644
66	23.75	52.00	77.00	21.90	1680	2.21	1320	1950	2.035
72	28.26	57.00	83.00	25.60	1830	2.63	1450	2100	2.378
3x1 Corrugations									
54	15.90	48.50	58.50	15.60	1370	1.48	1230	1480	1.449
60	19.63	54.00	65.00	19.30	1520	1.82	1370	1650	1.793
66	23.75	58.25	72.50	23.20	1680	2.21	1480	1840	2.155
72	28.26	62.50	79.00	26.50	1830	2.63	1590	2000	2.506
78	33.17	67.25	86.50	32.10	1980	3.08	1710	2190	2.982
84	38.47	71.75	93.50	37.00	2130	3.57	1820	2370	3.437
90	44.16	76.00	101.50	42.40	2290	4.10	1930	2570	3.939
96	50.24	80.50	108.50	48.00	2440	4.67	2040	2750	4.459
102	56.72	84.75	116.50	54.20	2590	5.27	2150	2950	5.035
108	63.59	89.25	123.50	60.50	2740	5.91	2270	3130	5.621
114	70.85	93.75	131.00	67.75	2900	6.58	2380	3320	6.214
120	78.50	98.00	138.50	74.50	3050	7.29	2490	3510	6.921